

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2005/012028

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 A61K31/495 A61P25/28 C07D295/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 A61K C07D A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, CHEM ABS Data, BEILSTEIN Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X, L	WO 2004/108666 A (SAMARITAN PHARMACEUTICALS; GEORGETOWN UNIVERSITY; LECANU, LAURENT; GRE) 16 December 2004 (2004-12-16) page 5, lines 21-23; compound SP008 figure 1; compound SP016 ----- -/-	1-27

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

20 October 2005

Date of mailing of the international search report

27/10/2005

Name and mailing address of the ISA

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NL - 2280 HV Rijswijk  
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Kollmannsberger, M.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/012028

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	<p>LECANU L ET AL: "Identification, design, synthesis, and pharmacological activity of (4-ethyl-piperazin-1-yl)-phenylmethanone derivatives with neuroprotective properties against beta-amyloid-induced toxicity"</p> <p>NEUROPHARMACOLOGY, PERGAMON PRESS, OXFORD, GB,</p> <p>vol. 49, no. 1, July 2005 (2005-07), pages 86-96, XP004963513</p> <p>ISSN: 0028-3908</p> <p>the whole document</p> <p>-----</p>	1-27
P,X	<p>WO 2004/035556 A (GLAXO GROUP LIMITED; ANCLIFF, RACHAEL; ELDRED, COLIN, DAVID; FOGDEN, Y) 29 April 2004 (2004-04-29)</p> <p>claim 7</p> <p>examples 1-11, 32-47</p> <p>-----</p>	1-27
A	<p>US 5 693 804 A (DEBERNARDIS ET AL)</p> <p>2 December 1997 (1997-12-02)</p> <p>column 5, line 50 - column 6, line 31</p> <p>-----</p>	1-27
A	<p>WO 01/07435 A (MERCK PATENT GMBH; BOETTCHER, HENNING; GREINER, HARTMUT; HARTING, JUER)</p> <p>1 February 2001 (2001-02-01)</p> <p>claims</p> <p>-----</p>	1-27
A	<p>US 2004/034019 A1 (TOMLINSON RONALD ET AL)</p> <p>19 February 2004 (2004-02-19)</p> <p>examples 56, 57</p> <p>-----</p>	1-27
X	<p>DE 23 04 155 A1 (ICHTHYOL-GESELLSCHAFT CORDES, HERMANNI &amp; CO, 2000 HAMBURG)</p> <p>1 August 1974 (1974-08-01)</p> <p>claims 1, 7</p> <p>table 1</p> <p>examples</p> <p>-----</p>	25
X	<p>YUNG D K ET AL: "POTENTIAL ANTI ARRHYTHMIC AGENTS SYNTHESIS AND PHARMACOLOGICAL EVALUATION OF SOME PIPERAZINE AND ETHYLENEDIAMINE ANALOGS OF PROCAINAMIDE 1 N PROPYL-4-BENZOYL PIPERAZINE HYDRO CHLORIDE 1 N BUTYL-4-BENZOYL PIPERAZINE HYDRO CHLORIDE 1 N PROPYL-4-P-METHOXYBENZOYL PIPERAZINE HYDRO CHLORIDE 1 N PROPYL-4-P"</p> <p>JOURNAL OF PHARMACEUTICAL SCIENCES,</p> <p>vol. 57, no. 12, 1968, pages 2073-2080,</p> <p>XP009055767</p> <p>ISSN: 0022-3549</p> <p>table III</p> <p>-----</p> <p style="text-align: center;">-/--</p>	25

## INTERNATIONAL SEARCH REPORT

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FUKUSHI H ET AL: "SYNTHESIS AND PLATELET-ACTIVATING FACTOR (PAF)-ANTAGONISTIC ACTIVITIES OF 1,4-DISUBSTITUTED PIPERAZINE DERIVATIVES" CHEMICAL AND PHARMACEUTICAL BULLETIN, PHARMACEUTICAL SOCIETY OF JAPAN, TOKYO, JP, vol. 42, no. 3, March 1994 (1994-03), pages 541-550, XP001118308 ISSN: 0009-2363 compound 2B table 1; compounds 2A-2M	25
X	YOUNES-EL-HAGE S ET AL: "SYNTHESE ET ETUDE DE L'ACTIVITE ANTIDEPRESSIVE D'ARYL ET HETEROARYL CARBOXAMIDES DE LA BENZYLPIPERAZINE SYNTHESIS AND ANTIDEPRESSIVE ACTIVITY STUDY OF ARYL AND HETEROARYL CARBOXAMIDES OF BENZYLPIPERAZINE" ANNALES PHARMACEUTIQUES FRANCAISES, MASSON, PARIS, FR, vol. 58, no. 4, 2000, pages 254-259, XP008031993 ISSN: 0003-4509 table 1; compounds 1-14,23,24,27-42	25
X	YOUNES S ET AL: "Synthesis and structure-activity relationships of novel arylalkyl 4-benzyl piperazine derivatives as sigma site selective ligands" EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, EDITIONS SCIENTIFIQUE ELSEVIER, PARIS, FR, vol. 35, no. 1, January 2000 (2000-01), pages 107-121, XP004350211 ISSN: 0223-5234 compound 5	25
X	BAZIARD-MOUYSSET G ET AL: "Synthesis and structure-activity relationships of novel 2-amino alkyl chromones and related derivatives as sigma site-selective ligands" EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, EDITIONS SCIENTIFIQUE ELSEVIER, PARIS, FR, vol. 33, no. 5, June 1998 (1998-06), pages 339-347, XP004127366 ISSN: 0223-5234 table 1; compound 21	25
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## INTERNATIONAL SEARCH REPORT

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PCT/US2005/012028

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>CARCELLER E ET AL: "(PYRIDYLCYANOMETHYL)PIPERAZINES AS ORALLY ACTIVE PAF ANTAGONISTS" JOURNAL OF MEDICINAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. WASHINGTON, US, vol. 35, no. 22, 1992, pages 4118-4134, XP002044180 ISSN: 0022-2623 table 1; compound 34</p>	25

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## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 1-24, 26 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 2004108666	A	16-12-2004	NONE	
WO 2004035556	A	29-04-2004	AU 2003280380 A1 BR 0315283 A CA 2502249 A1 EP 1567511 A1	04-05-2004 30-08-2005 29-04-2004 31-08-2005
US 5693804	A	02-12-1997	AU 711703 B2 AU 4238796 A EP 0792269 A2 JP 10510248 T WO 9616052 A2	21-10-1999 17-06-1996 03-09-1997 06-10-1998 30-05-1996
WO 0107435	A	01-02-2001	AT 236877 T AU 770411 B2 AU 6270400 A BR 0012607 A CA 2383779 A1 CN 1364157 A CZ 20020068 A3 DE 19934433 A1 DK 1198453 T3 EP 1198453 A2 ES 2192535 T3 HU 0201988 A2 JP 2003505458 T MX PA02000730 A NO 20020307 A PL 353446 A1 PT 1198453 T SK 512002 A3 US 6838461 B1 ZA 200201486 A	15-04-2003 19-02-2004 13-02-2001 09-04-2002 01-02-2001 14-08-2002 17-04-2002 25-01-2001 21-07-2003 24-04-2002 16-10-2003 28-11-2002 12-02-2003 20-08-2002 21-03-2002 17-11-2003 29-08-2003 09-05-2002 04-01-2005 21-05-2003
US 2004034019	A1	19-02-2004	NONE	
DE 2304155	A1	01-08-1974	BE 810293 A1 ES 422738 A1 FR 2215236 A1 GB 1434323 A JP 50005389 A NL 7401215 A	16-05-1974 01-08-1976 23-08-1974 05-05-1976 21-01-1975 31-07-1974

## PATENT COOPERATION TREATY

31

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

STEFFEY, Charles, E.  
Schwegman, Lundberg, Woessner &  
Kluth, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402  
United States of America

Date of mailing (day/month/year) 05 December 2005 (05.12.2005)
Applicant's or agent's file reference 1941,001WO1
International application No. PCT/US2005/012028

<b>IMPORTANT NOTIFICATION</b>
International filing date (day/month/year) 12 April 2005 (12.04.2005)

1. The following indications appeared on record concerning:									
<input checked="" type="checkbox"/> the applicant	<input checked="" type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative								
Name and Address LECANU, Laurent GREESON, Janet PAPADOPOULOS, Vassilios	<table border="1"> <tr> <td>State of Nationality</td> <td>State of Residence</td> </tr> <tr> <td colspan="2">Telephone No.</td> </tr> <tr> <td colspan="2">Facsimile No.</td> </tr> <tr> <td colspan="2">Teleprinter No.</td> </tr> </table>	State of Nationality	State of Residence	Telephone No.		Facsimile No.		Teleprinter No.	
State of Nationality	State of Residence								
Telephone No.									
Facsimile No.									
Teleprinter No.									
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:									
<input checked="" type="checkbox"/> the person <input type="checkbox"/> the name <input type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence									
Name and Address <b>EPO-DG 1</b> 21. 12. 2005 <b>TEAM 14</b>	<table border="1"> <tr> <td>State of Nationality</td> <td>State of Residence</td> </tr> <tr> <td colspan="2">Telephone No.</td> </tr> <tr> <td colspan="2">Facsimile No.</td> </tr> <tr> <td colspan="2">Teleprinter No.</td> </tr> </table>	State of Nationality	State of Residence	Telephone No.		Facsimile No.		Teleprinter No.	
State of Nationality	State of Residence								
Telephone No.									
Facsimile No.									
Teleprinter No.									
3. Further observations, if necessary: <b>Assignment of rights. The persons indicated in Box 1 are now recorded as applicants for the US only and Inventors for all designated States.</b>									
4. A copy of this notification has been sent to:									
<input checked="" type="checkbox"/> the receiving Office	<input checked="" type="checkbox"/> the designated Offices concerned								
<input type="checkbox"/> the International Searching Authority	<input type="checkbox"/> the elected Offices concerned								
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 338.70.80	Authorized officer D. CABOT Telephone No. (41-22) 338 8435
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